

AMENDMENT TO THE SEPCIFICATION

Change Page 1, lines 5 to 13, as follows:

5 The present invention relates to a radiation detector used
for a positron emission computed assisted tomography ~~(CT)~~ (PET),
a single photon emission computed assisted tomography ~~(ECT)~~ (SPECT)
and the like, wherein the device detects a radioactive ray, i.e.
gamma ray, emitted from a radioactive isotope (RI) administered
10 to a subject and accumulated at a target region of the subject to
thereby obtain a tomogram of an RI distribution at the target region.

The present invention also relates to a method of producing the
radiation detector.

15 Change Page 3, lines 9 to 19, as follows:

The conventional ~~radiator~~ radiation detector as described above
has the following problems. In recent years, a high-resolution
radiation detector using super-sensitivity scintillators has been
20 developed, wherein a large number of the scintillators are used as
compared with the conventional radiation detector. Accordingly, a
section of each scintillator becomes smaller than that of the
conventional scintillator. In such a radiation detector, it is
necessary to form the light guide optically connected to the
25 scintillators with high accuracy, and to make a width between the
barriers short so that the light transmission efficiency is not
deteriorated.

Change Pages 3, line 20 to Page 4, line 4, as follows:

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In the conventional radiation detector, the slits with
predetermined depths are formed in a block of an optically transparent

material with a dicing saw or a wire saw, and the barriers are inserted into the slits. Accordingly, it is difficult to machine the block with high accuracy, and the slits tend to have rough surfaces and large widths. Also, in a case that the block is cut into nine pieces with the dicing saw or wire saw, and these pieces are assembled to form the slits, the process becomes complicated, resulting in high cost. Further, after the slits are machined or formed, the light reflex members are inserted. Accordingly, a gap is created between the light reflex member and the slit, thereby reducing the reflex efficiency. When the light output of the incident gamma ray is decreased, it is difficult to correctly determine the position, thereby reducing the whole image quality.